

## AMENDMENT TO THE CLAIMS

1. (Currently Amended) A method, comprising:  
executing a software object;  
establishing a security level for said software object; [[and]]  
performing a virtual address based memory access using said security level,  
performing said virtual address based memory access comprising using a  
secondary table and at least one virtual memory table, performing said  
virtual address based memory based upon a memory access request using  
said secondary table and said at least one virtual memory table, and  
accessing a portion of a memory based upon said virtual address memory access.
2. (Original) The method described in claim 1, wherein executing a software  
object further comprises using a processor to process software code of said software  
object.
3. (Original) The method described in claim 1, wherein establishing a  
security level for said software object further comprises assigning a security level relating  
to a memory access of at least a portion of a memory.
4. (Previously Presented) The method described in claim 1, wherein  
performing said virtual address based memory access using at least one of said security  
level further comprises:

establishing said secondary table;  
receiving a memory access request based upon executing of said software object;  
performing said virtual address memory access based upon said memory access  
request using said secondary table and said at least one virtual memory  
table; and  
accessing a portion of a memory based upon said virtual address memory access.

5. (Original) The method described in claim 4, wherein establishing a  
secondary table further comprises:

dividing a physical memory into a plurality of segments;  
determining at least one of said segment to omit from said secondary table and at  
least one un-omitted segment;  
assigning a default security level to said omitted segment;  
assigning a security level to said un-omitted segment; and  
correlate at least one assigned segment with a virtual memory location.

6. (Previously Presented) The method described in claim 4, wherein  
performing said virtual address memory access based upon said memory access request  
further comprises:

determining at least one security level that corresponds to a segment in said  
secondary table;  
verifying a match between an execution security level to a security level  
associated with a memory segment being accessed in response to an  
execution of said object;

determining a virtual memory address based upon said secondary table in response to a match between said execution security level and said security level associated with said segment being accessed; and locating a physical memory location corresponding to a virtual memory address.

7. (Original) The method described in claim 6, wherein determining at least one security level that corresponds to said segment in said secondary table further comprises:

determining a physical address from said virtual memory table;  
determining a segment being executed based upon said physical address; and  
defining a current security level based upon said determining of said segment being executed.

8. (Previously Presented) A method, comprising:

executing a software object;  
establishing a security level for said software object;  
establishing a secondary table;  
receiving a memory access request based upon said executing of said software object;  
determining at least one security level that corresponds to a segment in said secondary table based upon a virtual address; and

accessing a portion of a memory based upon said security level and said virtual address, accessing said portion of said memory comprising using said secondary table and at least one virtual memory table.

9. (Original) The method described in claim 8, wherein executing a software object further comprises using a processor to process software code of said software object.

10. (Original) The method described in claim 8, wherein establishing a security level for said software object further comprises assigning a security level relating to a memory access of at least a portion of a memory.

11. (Original) The method described in claim 8, wherein determining at least one security level that corresponds to a segment in said secondary table comprises:

determining a physical address from said virtual memory table;  
determining a segment being executed based upon said physical address; and  
defining a current security level based upon said determining of said segment being executed.

12. (Currently Amended) An apparatus, comprising:  
means for executing a software object;  
means for establishing a security level for said software object; [and];

means for performing a virtual address based memory access using said security level, means for performing said virtual address based memory access includes, means for using a secondary table and at least one virtual memory table, performing said virtual address based memory based upon a memory access request using said secondary table and said at least one virtual memory table, and  
means for accessing a portion of a memory based upon said virtual address memory access

13. (Currently Amended) An apparatus, comprising:

a processor coupled to a bus;

~~means for coupling at least one software object to said processor;~~

a software object operatively coupled to said processor

a memory unit; and

a memory access interface coupled to said bus and said memory unit, said

memory access interface to provide said processor a virtual address based access of at least a portion of said memory unit based upon at least one security level, in response to said processor executing said software object, said processor to use a secondary table and at least one virtual memory table to perform said virtual address based access and accessing a portion of said memory unit based upon said virtual address based access.

14. (Original) The apparatus of claim 13, wherein said processor comprises at least one microprocessor.

15. (Previously Presented) The apparatus of claim 13, wherein said memory access interface comprises said virtual memory table coupled with said secondary table, said memory access interface to provide a virtual memory addressing scheme to access at least one portion of said memory unit based upon a security level.

16. (Original) The apparatus of claim 13, wherein said memory unit comprises at least one of a magnetic tape memory, a flash memory, a random access memory, and a memory residing on a semiconductor chip.

17. (Currently Amended) A computer readable program storage device encoded with instructions that, when executed by a computer, performs a method, comprising:

executing a software object;

establishing a security level for said software object; and;

performing a virtual address based memory access using said security level,

performing said virtual address based memory access comprising using a

secondary table and at least one virtual memory table, performing said

virtual address based memory based upon a memory access request using

said secondary table and said at least one virtual memory table, and

accessing a portion of a memory based upon said virtual address memory access.

18. (Original) The computer readable program storage device encoded with instructions that, when executed by a computer, performs the method described in claim 17, wherein executing a software object further comprises using a processor to process software code of said software object.

19. (Original) The computer readable program storage device encoded with instructions that, when executed by a computer, performs the method described in claim 17, wherein establishing a security level for said software object further comprises assigning a security level relating to a memory access of at least a portion of a memory.

20. (Previously Presented) The computer readable program storage device encoded with instructions that, when executed by a computer, performs the method described in claim 17, wherein performing a virtual address based memory access using at least one of said security level further comprises:

establishing said secondary table;

receiving a memory access request based upon executing of said software object;

performing a virtual address memory access based upon said memory access

request using said secondary table and said at least one virtual memory  
table; and

accessing a portion of a memory based upon said virtual address memory access.

21. (Original) The computer readable program storage device encoded with instructions that, when executed by a computer, performs the method described in claim 20, wherein establishing a secondary table further comprises:

- dividing a physical memory into a plurality of segments;
- determining at least one of said segment to omit from said secondary table and at least one un-omitted segment;
- assigning a default security level to said omitted segment;
- assigning a security level to said un-omitted segment; and
- correlate at least one assigned segment with a virtual memory location.

22. (Previously Presented) The computer readable program storage device encoded with instructions that, when executed by a computer, performs the method described in claim 20, wherein performing a virtual address memory access based upon said memory access request further comprises:

- determining at least one security level that corresponds to a segment in said secondary table;
- verifying a match between an execution security level to a security level associated with a segment being accessed in response to an execution of said object;
- determining a virtual memory address based upon said secondary table in response to a match between said execution security level and said security level associated with said segment being accessed; and
- locating a physical memory location corresponding to a virtual memory address.



23. (Original) The computer readable program storage device encoded with instructions that, when executed by a computer, performs the method described in claim 22, wherein determining at least one security level that corresponds to a segment in said secondary table comprises:

determining a physical address from said virtual memory table;  
determining a segment being executed based upon said physical address; and  
defining a current security level based upon said determining of said segment being executed.

24. (Previously Presented) A method, comprising:

executing a software object;

establishing a security level for said software object;

establishing a secondary table, establishing said secondary table comprises

dividing a physical memory into a plurality of segments, determining at least one of said segment to omit from said secondary table and at least one un-omitted segment, assigning a default security level to said omitted segment, assigning a security level to said un-omitted segment; and  
correlating at least one assigned segment with a virtual memory location;

performing a virtual address based memory access using at least one of said security levels, performing said virtual based address memory access comprising using said secondary table and at least one virtual memory table; and

executing said function of said object based upon said virtual address based memory access.

25. (Previously Presented) The method described in claim 1, further comprising executing a function of said object based upon said virtual address based memory access.

26. (Previously Presented) The computer readable program storage device encoded with instructions that, when executed by a computer, performs the method described in claim 17, the method further comprising executing a function of said object based upon said virtual address based memory access.